

Paragraph bridging pages 19 and 20:

Photomicrographs of the plug face showed latex accumulation along microfractures in the shale. As the volume and velocity of filtration flow into these cracks is very small, filtration alone cannot account for the latex accumulation at the crack throat. Inside these cracks the clay surface area to filtrate volume ratio is very large resulting in heavy EXP-154 precipitation. The reason may relate to the co-precipitation behavior of EXP-154 and EXP-155 as discussed previous, without being limited to any particular explanation. The precipitation of aluminum complex at pH <9 apparently enhances latex accumulation at the crack throat. When sufficient latex is deposited to bridge the crack opening, the fracture is sealed and differential pressure is established across the latex. The differential pressure consolidates the latex deposit into a solid seal. Increasing the differential pressure apparently causes this seal to deform over time (about 30 hours in the case of the FIG. 6 results) and/or grows additional cracks in the shale and the shale begins to leak, although the inventors do not necessarily want to be limited by this explanation. However, additional circulation rapidly sealed the leaks and reestablished the seal. Circulating after the full differential pressure was reached formed a stable seal with only a small pressure rise.

Claims:

1. (Amended) A water-based drilling fluid comprising:
 - a) a polymer latex capable of providing a deformable latex film on at least a portion of a subterranean formation;
 - b) water; and
 - c) at least one precipitating agent selected from the group consisting of aluminum complexes.
3. (Amended) The water-based drilling fluid of claim 1 where the precipitating agent further comprises a silicate.
8. (Amended) A water-based drilling fluid comprising:

- a) a polymer latex;
 - b) a precipitating agent selected from the group consisting of aluminum complexes;
 - c) a surfactant; and
 - b) water.
10. (Amended) The water-based drilling fluid of claim 9 where the salt is selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof.
12. (Amended) The water-based drilling fluid of claim 8 where the precipitating agent further comprises a silicate.
- Claim 13 is cancelled.*
20. (Amended) A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:
- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex capable of providing a deformable latex seal on at least a portion of a subterranean formation;
 - ii) water; and
 - iii) at least one precipitating agent selected from the group consisting of aluminum complexes; and
 - b) circulating the water-based drilling fluid in contact with a borehole wall.
22. (Amended) The method of claim 20 where in providing the water-based drilling fluid, the precipitating agent further comprises a silicate.

24. (Amended) A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;
 - ii) a precipitating agent selected from the group consisting of aluminum complexes; and
 - iii) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.

27. (Amended) A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;
 - ii) a precipitating agent selected from the group consisting of aluminum complexes;
 - iii) a surfactant; and
 - iv) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.

31. (Amended) The method of claim 27 where in providing the water-based drilling fluid, the precipitating agent further comprises a silicate.

Claim 32 is cancelled.

38. (Amended) A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) from about 0.1 to about 10 vol.% of a polymer latex selected from the group consisting of polymethyl methacrylate,

polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof;

- ii) from about 0.25 to about 20 lb/bbl of a precipitating agent selected from the group consisting of silicates, aluminum complexes, and mixtures thereof;
- iii) at least 1 wt.% of a salt selected from the group consisting of calcium chloride, sodium chloride, potassium chloride, magnesium chloride, calcium bromide, sodium bromide, potassium bromide, calcium nitrate, sodium formate, potassium formate, cesium formate, and mixtures thereof;
- iv) from about 0.005 to about 2 vol.% of a surfactant selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
- v) water making up the balance,

where the proportions are based on the total water-based drilling fluid; and

- b) circulating the water-based drilling fluid in contact with a borehole wall.

Please add the following new claims.

39. (Newly submitted) A water-based drilling fluid comprising:

- a) a polymer latex;
- b) a precipitating agent;
- c) a surfactant, where the surfactant is selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
- d) water.

40. (Newly submitted) A method of inhibiting borehole wall invasion when drilling with a water-based drilling fluid in a subterranean formation, the method comprising:

- a) providing a water-based drilling fluid comprising:
 - i) a polymer latex;
 - ii) a precipitating agent;
 - iii) a surfactant, where the surfactant is selected from the group consisting of betaines, alkali metal alkylene acetates, sultaines, ether carboxylates, and mixtures thereof; and
 - iv) water; and
- b) circulating the water-based drilling fluid in contact with a borehole wall.